

In-Hospital Paternity Establishment and Father Involvement in Fragile Families

This article assesses the effectiveness of in-hospital paternity establishment, a federal requirement since 1993. We avoid biases in previous studies by using a national sample of nonmarital births (N = 3,254), by including detailed controls for characteristics of unwed mothers and previously unavailable controls for characteristics of fathers, and by estimating reduced form models of the effects of strong paternity establishment regimes. We find that paternity establishment rates are now quite high—69%—and that 6 of 7 paternities are established in the hospital. Even after controlling for previously unavailable characteristics, establishing paternity (in and outside the hospital) is significantly and positively associated with formal and informal child support payments and father-child visitation. These results hold up in the reduced form models.

Over the past 30 years, paternity establishment has become an important component of the child support enforcement program for several reasons. Unwed births now constitute more than a third of annual births and more than half of child support and welfare caseloads (U.S. House of Representatives, Committee on Ways and Means, 2000). The poverty rate of female-headed families with children is five times the

rate for married-couple families with children (U.S. Census Bureau, n.d.). Nonmarital children are much less likely to have child support orders, in part, because paternity determination is a prerequisite (Beller & Graham, 1993). Because young unwed fathers experience substantial growth in earnings within 5 years after the birth of their child, their capacity to contribute to the financial needs of children grows rapidly (Knock, 1998; Lerman, 1993; Meyer, 1992; Phillips & Garfinkel, 1993).

Prior assessments of the effectiveness of paternity establishment policies have taken advantage of the process of evolution of these policies over the past decade or more. Innovative ideas emerging from policy or demonstration research in a few states have been incorporated into federal mandates, which are adopted more or less rapidly by state legislatures. The varying lags in the time in which states adopt federal mandates provide a natural experiment with which to assess policy effectiveness (Miller & Garfinkel, 1999). Voluntary in-hospital paternity acknowledgment, as described below, is the most recent and arguably most important tool for establishing paternity.

This article assesses the effectiveness of in-hospital paternity establishment, using data from the Fragile Families and Child Wellbeing Study to describe the proportion of nonmarital births, between 1998 and 2000, in which the father voluntarily established paternity at birth in the hospital. It also documents the proportion of total paternities established in the hospital by the child's first year of life. We describe who establishes paternity, in the hospital and in other

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settings. We then examine the effect of in-hospital paternity establishment on the probability of the child's mother receiving any child support from the father (formal or informal) and the probability of visits by nonresident fathers. The last outcome (visitation) is a frequently alleged benefit of paternity establishment, which has rarely been tested previously (Argys & Peters, 2001; Pearson & Thoennes, 1996).

Evolution of Paternity Establishment Policies

Aiming to stem the growth of the welfare rolls and recoup the cost of public benefits, Congress passed a series of amendments to the Social Security Act, including provisions designed to increase paternity establishment for children born to unwed parents. The first, in 1967, required states to provide incentives to recipients to establish paternity for children receiving Aid to Families with Dependent Children. With the 1975 amendments, through Title IV-D, Congress established the Federal Office of Child Support Enforcement and required states to establish similar offices, which were responsible for establishing paternity for nonmarital births, securing child support obligations, and enforcing these obligations. As a result of amendments in 1984 and 1988, states moved from judicial to simplified civil procedures for establishing paternity. They were also required to meet paternity establishment goals, adopt procedures to compel genetic testing in contested cases, and obtain the Social Security numbers of both parents before issuing birth certificates or lose a portion of the funds the federal government provides in support of their child support programs.

Most important, for our purposes, the Omnibus Budget Reconciliation Act of 1993 required states to establish in-hospital paternity acknowledgment programs. These programs were expanded by the 1996 amendments, known as the Personal Responsibility and Work Opportunity Act (PRWORA). PRWORA also raised paternity establishment goals (and financial penalties) and required states to prohibit an unwed father from having his name on a child's birth certificate unless that father signed a voluntary acknowledgment of paternity.

Despite congressional mandates, parental relationships and Office of Child Support Enforcement's commitment to the process play important roles in the outcome of in-hospital paternity establishment. Without published stand-

ards or requirements that hospitals use the process a state establishes, in-hospital paternity establishment programs vary dramatically across (and within) states (D. Christmas, R. Claytor, D. Durham-McLoud, and H. Gallagan, personal communications, January–February, 2004). The better the relationship between the parents, the more likely the father is to be present at the birth and the more likely couples are to want the father's name on the birth certificate. The more committed the Office of Child Support Enforcement is to the voluntary paternity establishment process, the more effort will be made to secure the cooperation of hospitals and to reach out to parents, often through local human service agencies.

Our expectations of the determinants of out-of-hospital paternity establishment are not clear because in these cases, paternity acknowledgment may be involuntary. For example, a mother may enlist the help of child support enforcement to pursue a father who is not providing support or who denies paternity. Often the courts are involved and genetic testing may have been ordered.

Prior Research on the Effectiveness of Policies

Previous assessments support the effectiveness of legislative efforts to increase paternity establishments (McLanahan, Brown, & Monson, 1992; Nichols-Casebolt & Garfinkel, 1991; Sonenstein, Holcomb, & Seefeldt, 1994; Sorensen & Oliver, 2002). There have been few assessments of in-hospital paternity programs because they are so recent. Sorensen and Oliver, however, found that paternity establishment rates increased in 7 of the 13 states they studied that operated in-hospital paternity establishment programs between 1996 and 1998. Evaluations of in-hospital paternity establishment demonstration projects within particular states showed that in-hospital programs with lower fees and waiting times improved parent outreach, and information or assistance provided to parents can increase paternity establishment rates (Pearson & Thoennes, 1996; Williams, Venohr, & Baxter, 1995).

Turner (2001) examined in-hospital paternity establishment after the 1993 mandates using a survey of unwed parents in seven cities. He found that the staff-to-caseload ratio increased the probability that mothers were approached about paternity establishment but that having a formal paternity program had no significant

effect on the probability that mothers were approached about paternity establishment. Unfortunately, Turner had no measure of whether paternity was ultimately established.

These assessments suffer from three limitations. First, only a few studies used nationally representative data, and they measured (or inferred) paternity establishment by the proportion of children of never-married mothers who had child support orders or by estimated paternity establishment rates. The former provides downwardly biased estimates of paternity establishment because there is no order for many nonmarital children for whom paternity is established (U.S. House of Representatives, Committee on Ways and Means, 2000). The latter has biases in both directions. Paternity establishment rates are usually computed by dividing the number of paternities established in a state in a given year by the number of unwed births in that year. The resulting estimate is biased upward when the numerator includes paternities established for children who were born in a previous year. It is biased downward because some unwed mothers marry shortly after they give birth (Nichols-Casebolt & Garfinkel, 1991).

Second, controls for demographic characteristics (usually, the mother's), which could affect paternity establishment, have been limited. Studies generally have relied on a few controls (e.g., age, race and ethnicity, poverty status, and educational attainment) as proxies for the mother's financial need for child support, one motivation for establishing paternity. Results have been mixed, however. For example, Miller and Garfinkel (1999) and Sonenstein et al. (1994) found opposite effects of poverty on paternity establishment rates. Controls for a father's demographic characteristics or his commitment to his children are rare.

Few studies controlled for cohabitation, which could be an important determinant of the effectiveness of in-hospital paternity programs for several reasons. First, Congress mandated such programs after the proportion of unwed births accounted for by cohabiting unwed parents became substantial (Bumpass & Lu, 2000). Second, unwed parents who cohabit (hereafter, residential parents) are presumably involved in more committed relationships than unwed parents who do not (hereafter, nonresidential parents). Male partners from the former are more likely to have been present at the hospital, when the opportunity for in-hospital paternity estab-

lishment is presented and explained to both parents. Moreover, because resident parents are likely to share their incomes, a child support order is less likely to follow paternity acknowledgment by a residential father. If avoiding a child support order is one reason parents decline to acknowledge paternity, resident parents should have higher probabilities of establishing paternity than nonresident parents (Turner, 2001). Although Turner controlled for cohabitation, as mentioned above, he examined a different outcome.

Third, most studies of paternity establishment policies examined direct effects (i.e., whether more paternities are established) and pecuniary benefits (child support awards and child support payments). The indirect effect on visitation (a nonpecuniary benefit) has been alleged but rarely tested, and no study has examined the effect of in-hospital paternity establishment specifically.

This paper contributes to the literature by addressing each of these shortcomings. We use a national sample of unmarried parents to measure paternity establishment on the basis of mothers' reports about whether and where—in the hospital or in another setting—paternity was established for their children. We use these measures to construct a dependent variable for multinomial logit models of the likelihood that paternity was established in the hospital, outside of the hospital, or not at all. These logit models include controls for the demographic characteristics of unwed mothers and previously unavailable demographic characteristics of fathers. Next, to examine the role of policy, we measure the effects of city-level, in-hospital paternity establishment rates on overall paternity establishment. Finally, we examine associations between paternity establishment and child support payments (formal and informal) and associations between paternity establishment and visitation.

CONCEPTUAL FRAMEWORK AND EXPECTED EFFECTS OF COVARIATES

When given the opportunity in the hospital, some unwed fathers will be more likely to acknowledge paternity than others. Following Willis (1999), we assume that fathers will do so if improvements in the child's well-being also make the father better off, which Willis calls a preference for children, and if the mother is willing to spend enough on the child to raise the

father's well-being above what it would be if he did not acknowledge paternity. Nonresident fathers can improve the child's well-being only by giving money to the mother, however, who, in turn, makes direct expenditures on the child. Willis calls the father's willingness to reduce his own consumption in favor of expenditures on child well-being *altruism*.

Several variables are associated with altruism or preferences for the child. We expect fathers to be less altruistic and therefore less likely to acknowledge paternity if the mother has had children by other fathers. Conversely, we expect fathers to be more altruistic if fathers had other children with the mother, contributed cash or in-kind support during the pregnancy, said they would continue such contributions in the future, knew the mother for several years prior to the pregnancy, were involved in committed relationships with the mother at the child's birth (baseline), were similar to the mother in age and educational attainment, had the same minority status as the mother, and were supportive of the mother.

Following Huang and Mincy (2002), we construct the father's supportiveness index using four questions: (a) Was he fair and willing to compromise when you had a disagreement?, (b) Did he express affection or love for you?, (c) Did he encourage or help you do things that were important to you?, and (d) Did he insult or criticize you or your ideas (reverse coding)? There are three levels of response for each question: *never happened*, *sometimes*, and *often* (coded as 0, 1, and 2, respectively). The supportiveness score is calculated as the average of responses to these four questions, with a range from 0 to 2.

Although fathers can contribute nothing and have children with many unmet needs, Willis (1999) showed that the mother and father benefit if they are able to reach an agreement about sharing the cost of improving child well-being. The father's contributions toward this end will be positively related to his income and negatively related to the mother's income. Lower income mothers may be more likely to seek paternity establishment because they are more in need of child support income. Several variables are positively correlated with the father's income: age, educational attainment, and employment status prior to the birth. Variables that are negatively correlated with the father's (disposable) income include whether he had

previous children with a different partner (multiple partner fertility), ever been incarcerated, a health condition that limited work, or a substance abuse problem that created an employment barrier. In addition, we include the father's minority status (non-Hispanic Black and Hispanic) because previous literature indicates that Blacks and Latinos are less likely than Whites to participate in the formal child support system (Beller & Graham, 1993).

From Willis (1999) and the previous empirical literature, we expect characteristics that are positively associated with the mother's income to be negatively associated with the probability of in-hospital paternity establishment. Among these characteristics are work status and Temporary Assistance for Needy Families (TANF) or Food Stamp receipt in the year prior to the birth and health status at the time of the birth. Because paternity acknowledgments that occur outside of the hospital may or may not be voluntary, we do not have firm predictions about the associations between most demographic characteristics and out-of-hospital paternity establishment. If the mother received TANF prior to the birth, however, we expect that the welfare agency will be especially interested in establishing paternity for the new birth. Therefore, this variable should be positively associated with the probability of establishing paternity outside of the hospital. Except for TANF and Food Stamp receipt in the year prior to birth, each of these variables should be negatively associated with the probability of in-hospital paternity establishment.

Finally, we include two city- and state-level measures (maximum combined TANF and Food Stamp benefit for a family of three in 1999 and the city unemployment rate at time of baseline interview) to the models to control for variation in cities' standards of living, which may affect fathers' ability to contribute and mothers' need for assistance.

METHOD

Data

We use data from the Fragile Families and Child Wellbeing Study, which examines the conditions and capabilities of new unwed parents and the well-being of their children. The baseline data consist of 4,898 births—3,711 nonmarital and 1,187 marital births—in 75 hospitals in 20 U.S. cities with populations of 200,000 or more

(in 15 states) and are representative of all births in each of these cities. The national sample consists of 16 cities, which were selected randomly to be representative of all cities with populations over 200,000. New parents were interviewed in the hospital shortly after their child's birth, with follow-up interviews conducted 1, 3, and 5 years later with both mothers and fathers (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Whether paternity has been established and whether it was established at the hospital or in another setting were asked of the mother at the 1-year follow-up survey. Response rates at birth and the 1-year follow-up for unwed mothers were 87% and 89%, respectively. Our sample consists of 3,254 mothers who were unmarried at the time of the focal child's birth and who were reinterviewed at the 1-year follow-up. Of these, 1,683 unmarried mothers were not living with the father of the focal child at the time of the 1-year survey. We refer to this group as the nonresident sample. The actual sample sizes in each multivariate model are somewhat lower because of missing values on the dependent variables.

Our data are from the baseline and 1-year follow-up surveys of mothers. Relying on mothers' reports has advantages and disadvantages. The main advantage derives from the high response rates of mothers. About 25% of fathers with nonmarital births were not interviewed. The missing fathers are more likely to be in less committed relationships with the mothers at birth, which would bias our results. Mothers' response rates also do not appear to be systematically related to the variables collected in the survey. Moreover, we ask mothers questions about fathers. For these reasons, relying on mothers' responses reduces the chances of nonresponse bias. The main disadvantage of using mothers' reports is that mothers may underestimate the level of fathers' contact with their children, and this kind of measurement error may be related to how mothers feel about the father at the time of the interview. These feelings may be based on the parents' relationship, father's payment or nonpayment of child support, and his cooperation with her in child-rearing and may introduce some amount of bias.

Table 1 presents the mean values of all variables of interest for two samples of unmarried mothers in all 20 cities: the entire unmarried sample (Column 1) and the sample of mothers

who were not residing with the father (Column 2, the nonresident sample). To obtain precise estimates, we use the full 20-city sample. Except for race and ethnicity, this sample is nearly identical to the national sample of 16 cities. By controlling for race and ethnicity, we are able to generalize our results to all nonmarital births in large U.S. cities.

The paternity establishment rate in large urban areas—Column 1, Row 1—is quite high: 69%! Not surprisingly, paternity establishment is lower in the nonresident sample because the entire unmarried sample includes fathers who cohabited with mothers at baseline. Still, a majority of nonresident fathers (58%) have established paternity. In-hospital paternity establishment accounts for 81% of all paternities established (56 divided by 69), but only 42% of nonresident fathers established paternity in the hospital.

The three outcome measures—whether a father saw his child in the past 30 days, whether he had an overnight visit since the child's birth, and whether he had paid any child support (formal or informal)—are measured as dichotomous variables (*yes* or *no*). All were asked of the mother at the 1-year follow-up interview. In the first version of the questionnaire, administered in the first two cities, mothers were not asked about children's overnight visits with fathers. Therefore, the sample size for this outcome is smaller. Resident fathers have daily contact with their children and usually share household expenses with their partners. Therefore, fathers who were cohabiting at the time of the follow-up survey were not asked these questions. In the analyses, we assign these fathers *yes* values for these three measures.

Thus, we observe a high level of fathers' involvement in the entire unmarried sample: 76% of unmarried fathers saw their child in the past 30 days, three quarters had an overnight visit since the child was born, and nearly 80% paid some child support (Column 1). The surprising and encouraging news is the very high level of involvement among nonresident fathers, with 71% having contact in the past month, 61% having at least one overnight visit since birth, and 67% contributing financially. We use the baseline survey to measure all but two of our control variables. To measure whether the father has children with other mothers and the father's incarceration history, we use the 1-year survey, which was the first to include these controls.

TABLE 1. VARIABLE MEANS FOR TWO SAMPLES OF MOTHERS (% UNLESS OTHERWISE SPECIFIED)

	Entire Unmarried Sample	Nonresident Sample
<i>N</i>	3,254	1,683
Individual paternity establishment		
Paternity established	69	58
In-hospital paternity	56	42
Father-child involvement measures		
Father saw child in past 30 days ^a	76	71
Father had overnight visit with child since birth ^a	75	61
Father paid any support since birth	79	67
Altruism and child preferences		
Dad did not suggest abortion	88	82
Dad contributed cash during pregnancy	82	69
Dad contributed in kind during pregnancy	79	63
Dad intends to contribute	91	82
Father's supportiveness index (scale measure: 0–2; 2 = more supportive)	1.58	1.46
Male child	53	54
Mom has other children with dad	31	24
Mom has children with other dads	42	43
Mom wants dad involved	94	89
Father's ability to pay characteristics		
Dad is White	12	8
Dad is Black	57	68
Dad is Hispanic	28	22
Dad is other race	3	3
Dad is <21	18	22
Dad is 21–24	31	30
Dad is 25–29	25	26
Dad is 30+	26	23
Dad has <high school	35	33
Dad is high school graduate	39	39
Dad has >high school	21	19
Dad's education unknown	5	9
Dad worked prior to birth	72	64
Dad's work status unknown	7	12

TABLE 1. CONTINUED

	Entire Unmarried Sample	Nonresident Sample
Dad has children with other mothers	41	46
Dad's other children unknown	5	8
Dad's health limits work	7	6
Dad's health unknown	4	6
Dad spent time in jail or prison	34	38
Dad's jail or prison status unknown	7	10
Dad has alcohol or drug problem	6	8
Dad's alcohol or drug problem unknown	2	4
Couple characteristics		
Parents cohabiting at baseline	48	0
Parents romantic at baseline	35	67
Parents friends at baseline	8	15
Parents little or no contact at baseline	9	18
Parents are same race	85	84
Difference in parents' ages (dad – mom) (years)	2.4	2.0
Difference in parents' education (dad – mom) (scale)	–0.02	–0.03
Years knew each other prior to pregnancy (years)	3.8	3.6
Mother's characteristics		
Mom born in the United States	87	91
Mom worked year prior to birth	68	66
Mom on TANF or Food Stamps before birth	44	48
Mom in very good health	64	64
City/state characteristics		
Maximum TANF and Food Stamp benefit	\$717	
City unemployment rate	5.4	

^aParents who were coresident were not asked about father-child contact. Therefore, these parents were coded to yes for both any contact in past 30 days and any overnight visits since birth.

Analytic Approach

Our analysis proceeds in three steps. First, we model the paternity establishment decision as a multinomial logit with a three-level dependent variable: whether a mother establishes paternity in the hospital, in another setting, or not at all. We examine the association between each independent variable and the likelihood of establishing paternity either in the hospital or out of the hospital as compared to having no paternity established, conditional on all the parent and child characteristics mentioned above. We present these analyses for both the entire unmarried sample and for the sample of mothers who were not residing with the father at the time of the child's birth.

Second, we assess the influence of both overall and in-hospital paternity establishment on our three measures of father involvement. Although we include all the control variables discussed previously, it is still possible that we are measuring father commitment imperfectly and that commitment is driving both paternity establishment and father involvement. Therefore, in the third and final step, we estimate reduced form models, with city-level residual aggregate measures of paternity establishment and a state-level legislative measure taking the place of individual decisions about paternity establishment. We construct the former measures by regressing the individual-level variable for whether a mother established paternity on a variety of demographic characteristics. We then calculate a residual for each mother (the actual probability of establishing paternity minus the predicted probability) and then assign each city its mean residual. This measure captures the variation in paternity establishment rates between cities purged of city compositional differences and is an indicator of the effectiveness of the city's in-hospital paternity establishment system. As mentioned in the background section, there is great variation in the in-hospital paternity establishment procedures between states and within states because of differences in implementation at the local level. Our residual measure captures all these differences.

Our other indicator is how long states have accepted voluntary paternity establishment as conclusive. For the 15 Fragile Families states, these dates range from January 1990 in Virginia to September 1999 in Texas (U.S. Department

of Health and Human Services, n.d.). This state-level measure captures a state's commitment to the in-hospital paternity establishment process.

RESULTS

Determinants of Paternity Establishment

Tables 2a and 2b present the findings from multinomial logit models of the paternity establishment decision (in-hospital and outside the hospital as compared with none at all) for all unmarried mothers and those with nonresident fathers, respectively. The coefficients presented in these two tables are marginal effects computed from multinomial logits. They should be interpreted as the change in the dependent variable associated with a one-unit change in the independent variable.

Table 2a shows our results for the predictors of in-hospital paternity establishment for all nonmarital children. Most of the variables indicating fathers' preferences for (or altruism toward) children have the expected signs and most are statistically significant. Compared with children born to fathers who contributed nothing during the pregnancy, paternity establishment in the hospital was 16 percentage points more likely for children born to fathers who made financial contributions during the pregnancy and 12 percentage points more likely for children born to fathers who made in-kind contributions during the pregnancy. In-hospital paternity establishment was also more likely for children born to fathers who were more supportive of mothers but less likely for children born to mothers with multiple partner fertility. Of the coefficients for preference and altruism variables with unexpected signs (male child and mother has other children in common with father), neither is statistically significant.

With two exceptions, the coefficients of variables indicating fathers' ability to pay also have the expected signs and most are statistically significant. Compared with children with fathers who are high school dropouts, children with fathers who have had some college were 12 percentage points more likely to have had paternity established in the hospital than not at all. In-hospital paternity establishment was also more likely for children with fathers who were employed prior to the birth and for children with fathers who had no multiple partner fertility. Surprisingly, compared with fathers who had no

TABLE 2A. MULTINOMIAL LOGIT MODEL ESTIMATION OF THE PATERNITY ESTABLISHMENT
DECISION FOR ALL UNMARRIED MOTHERS ($N = 3,134$)

	In-Hospital Paternity		Out-of-Hospital Paternity	
	Marginal Effect	<i>z</i>	Marginal Effect	<i>z</i>
Altruism and child preferences				
Dad did not suggest abortion	0.005	0.14	−0.017	−0.91
Dad contributed cash during pregnancy	0.162***	5.44	−0.062**	−3.26
Dad contributed in kind during pregnancy	0.119**	2.71	−0.020	−1.09
Dad intends to contribute	0.086	1.31	−0.003	−0.08
Father's supportiveness index	0.088**	2.63	−0.002	−0.11
Male child	−0.002	−0.10	−0.001	−0.08
Mom has other children with dad	−0.010	−0.33	0.019	1.38
Mom has children with other dads	−0.052**	−2.71	0.026	1.95
Mom wants dad involved	0.089	1.13	−0.015	−0.45
Father's ability to pay characteristics				
Dad is Black	−0.012	−0.34	−0.028	−1.18
Dad is Hispanic	0.060	1.09	−0.062*	−2.08
Dad is other race	0.088	1.10	−0.047	−1.04
Dad's age	0.003	1.04	−0.003**	−2.56
Dad is high school graduate	0.050	1.69	0.011	0.60
Dad has >high school	0.116**	3.05	0.035	1.59
Dad's education unknown	−0.015	−0.19	−0.024	−0.60
Dad worked prior to birth	0.074**	3.02	−0.019	−1.30
Dad's work status unknown	−0.164*	−2.29	0.012	0.29
Dad has children with other mothers	−0.100***	−4.05	0.018	1.67
Dad's other children unknown	−0.236***	−3.68	−0.046	−0.94
Dad's health limits work	0.060*	1.97	−0.029	−1.30
Dad's health unknown	−0.159*	−2.43	0.053	1.37
Dad spent time in jail or prison	−0.085***	−5.43	0.026*	2.29
Dad's jail or prison status unknown	−0.086	−1.93	0.014	0.63
Dad has alcohol or drug problem	0.112*	2.47	−0.001	−0.03
Dad's alcohol or drug problem unknown	0.241*	2.01	−0.024	−0.44
Couple characteristics				
Parents cohabiting at baseline	0.377***	5.06	−0.134***	−5.90
Parents romantic at baseline	0.255***	3.88	−0.084**	−3.31
Parents friends at baseline	0.216**	3.11	−0.049	−1.72
Parents are same race	−0.019	−0.48	−0.011	−0.69
Difference in parents' ages	−0.002	−0.44	0.002	1.17
Difference in parents' education	−0.050***	−4.54	−0.017*	−2.51
Years knew each other prior to pregnancy	−0.002	−0.63	0.000	−0.27
Mother's characteristics				
Mom born in the United States	−0.061	−1.04	0.044	1.24
Mom worked year prior to birth	−0.035	−1.40	0.023	1.33
Mom on TANF or Food Stamps before birth	−0.052**	−2.74	0.016	1.21
Mom in very good health	0.052	1.86	−0.017	−1.47
City/state characteristics				
Maximum TANF and Food Stamp benefit	−0.010	−0.29	0.010	0.56
City unemployment rate	0.011	0.86	0.002	0.51
Intercept	−0.588	−1.79	−0.008	−0.05

Note: Coefficients are marginal effects calculated from multinomial logit regressions and *z* statistics. They may be interpreted as the change in the dependent variable associated with a one-unit change in the independent variable.

* $p < .05$. ** $p < .01$. *** $p < .001$.

TABLE 2B. MULTINOMIAL LOGIT MODEL ESTIMATION OF THE PATERNITY ESTABLISHMENT DECISION
FOR MOTHERS WITH NONRESIDENT FATHERS (N = 1,642)

	In-Hospital Paternity		Out-of-Hospital Paternity	
	Marginal Effect	z	Marginal Effect	z
Altruism and child preferences				
Dad did not suggest abortion	0.027	0.65	0.047	-1.90
Dad contributed cash during pregnancy	0.202***	5.91	-0.076**	-2.62
Dad contributed in kind during pregnancy	0.101*	2.06	-0.019	-0.76
Dad intends to contribute	0.077	1.21	0.011	0.25
Father's supportiveness index	0.035	1.02	0.018	0.65
Male child	0.020	0.74	-0.006	-0.29
Mom has other children with dad	-0.027	-0.72	0.027	1.00
Mom has children with other dads	-0.047*	-2.06	0.016	0.80
Mom wants dad involved	0.072	1.01	-0.004	-0.10
Father's ability to pay characteristics				
Dad is Black	-0.030	-0.84	-0.041	-1.03
Dad is Hispanic	0.018	0.34	-0.081*	-2.08
Dad is other race	-0.156	-1.32	-0.048	-0.73
Dad's age	0.003	1.10	-0.002	-1.31
Dad is high school graduate	0.044	1.05	-0.003	-0.09
Dad has >high school	0.115**	3.50	0.042	1.77
Dad's education unknown	0.038	0.52	-0.071	-1.41
Dad worked prior to birth	0.057*	1.97	-0.009	-0.34
Dad's work status unknown	-0.125	-1.67	-0.001	-0.02
Dad has children with other mothers	-0.161***	-4.93	0.037	1.93
Dad's other children unknown	-0.308***	-4.13	-0.069	-1.00
Dad's health limits work	0.029	0.54	-0.010	-0.22
Dad's health unknown	-0.148	-1.95	0.054	0.96
Dad spent time in jail or prison	-0.077**	-3.10	0.030	1.68
Dad's jail or prison status unknown	-0.058	-1.32	0.012	0.42
Dad has alcohol or drug problem	0.084	1.69	0.022	0.72
Dad's alcohol or drug problem unknown	0.153	1.43	0.029	0.44
Couple characteristics				
Parents romantic at baseline	0.241***	4.00	-0.082**	-2.75
Parents friends at baseline	0.199**	2.95	-0.040	-1.12
Parents are same race	-0.085	-1.87	0.000	0.00
Difference in parents' ages	-0.007*	-2.05	0.001	0.46
Difference in parents' education	-0.051**	-3.06	-0.014	-1.07
Years knew each other prior to pregnancy	-0.002	-0.52	0.001	0.52
Mother's characteristics				
Mom born in the United States	-0.037	-0.77	0.076	1.38
Mom worked year prior to birth	-0.034	-1.08	0.046	1.82
Mom on TANF or Food Stamps before birth	-0.050	-1.74	0.028	1.51
Mom in very good health	0.064	1.72	-0.020	-0.85
City/state characteristics				
Maximum TANF and Food Stamp benefit	-0.019	-0.98	0.009	0.49
City unemployment rate	0.021*	2.24	0.004	0.72
Intercept	-0.435	-1.90	-0.156	-1.03

Note: Coefficients are marginal effects calculated from multinomial logit regressions and z statistics. They may be interpreted as the change in the dependent variable associated with a one-unit change in the independent variable.

*p < .05. **p < .01. ***p < .001.

physiological barriers to employment, fathers with health or substance abuse problems that limited work were (respectively) 6 and 11 percentage points more likely to establish paternity in the hospital, rather than not at all. We find no evidence of an association between in-hospital paternity establishment and minority group status, controlling for other characteristics.

With two exceptions, the coefficients of couple characteristics that should increase altruism or child preferences also have the expected signs, though not all are statistically significant. Baseline relationship status is a strong predictor of in-hospital paternity establishment. Compared with children born to parents who had little or no contact at birth, children born to parents who were cohabiting, romantically involved, or in friendly relationships at baseline were (respectively) 38, 26, and 22 percentage points more likely to have paternity established in the hospital rather than not at all. The difference between parents' educational attainment, however, is the only measure of homogamy that is statistically significant. It also has the expected (negative) sign, indicating that larger differences between fathers' and mothers' levels of education lead to lower likelihood of in-hospital paternity establishment. Neither coefficient with an unexpected sign (parents are the same race and years knew each other before the pregnancy) is statistically significant.

In contrast to fathers' and couples' characteristics, the coefficients of none of the variables reflecting mothers' need for child support income have the expected sign. Although mothers who received public benefits before the child's birth are more in need of child support income, they are also more likely to know that the state keeps most or all the father's child support payment. This probably explains why voluntary paternity establishment is less likely for their new children. We expect mothers with prior benefit receipt, however, to be more likely to establish paternity out of the hospital than not at all because welfare and child support administrators play a proactive role in establishing paternity for mothers who receive public benefits. Although the point estimate bears this out, the coefficient is not statistically significant.

Few of the other variables attain statistical significance in the equation for out-of-hospital paternity establishment. Notable exceptions include the coefficients for baseline relationship status. The coefficients of these variables (cohab-

iting, romantically involved, and in friendly relationships at baseline) are statistically significant and opposite in sign from the coefficients in the equation for in-hospital paternity establishment.

The pattern for parents who were not cohabiting at the time of the baseline survey (Table 2b) is very similar to the one described above. One city-level economic climate variable was important for this group. Curiously, mothers living in cities with higher unemployment were more likely to establish paternity in the hospital than none at all.

Because of the large number of control variables included in our models and the high level of correlation between some of these measures (see Appendix), there is a possibility that some important demographic effects are being suppressed. To examine this possibility, we ran pared down models of the determinants of paternity establishment. We eliminated all measures of fathers' altruism and several other variables that were correlated with standard demographic characteristics. We find no evidence of suppressed effects because of possible multicollinearity in the pared down models, with no demographic characteristics becoming significant that had previously not been significant (results not shown). The coefficients for parents' relationship status at birth increased substantially for in-hospital paternity establishment when the paternal altruism measures were removed. We also examined full models of paternity establishment for parents who were coresiding at the baseline survey (results not shown). These models were very similar to those for nonresident parents, except that the paternal altruism measures and fathers' multiple partner fertility were less important determinants of in-hospital paternity establishment for this group of parents.

Father-Child Involvement

Next we examine associations between individual paternity establishment and three measures of father-child involvement: whether father paid any support (formal or informal), whether father saw child in the past 30 days, and whether father had any overnight visits with child since birth. Our variable for paternity establishment is coded as a set of three dummies: father established paternity in the hospital, father established paternity outside the hospital, or paternity is not established (the omitted category). This analysis allows us to understand the differential associations between

in-hospital and out-of-hospital paternity establishment and fathers' involvement with children, controlling for numerous individual characteristics.

Table 3 presents results for the nonresident parent sample. Both types of paternity establishment are associated with significantly better outcomes on all our involvement measures as compared to having no paternity established. Another important finding from this table is that the coefficients on in-hospital paternity are consistently stronger (approximately twice as strong) than those for out-of-hospital paternity across all the models. For example, fathers who have established paternity in the hospital are 15 percentage points more likely to have seen their child in the past month, whereas those who established paternity outside the hospital are only 7 percentage points more likely than those who have no paternity established. These findings suggest that, even among nonresident parents, in-hospital paternity establishment is associated with higher levels of father involvement than establishing paternity outside the hospital. It may also suggest that there are unobserved differences between fathers who establish paternity in the hospital and those who establish paternity in another setting; these differences may be driving this relationship. Some of these unmeasured characteristics may include whether the pregnancy was wanted by the father, whether the father participated in a parenting preparation program, whether either parent has become involved in a new romantic relationship, the father's household composition, and many others.

Reduced Form Models

In the final analysis, we attempt to further address possible biases in the relation between paternity establishment and fathers' involvement with their children. We present reduced form equations because of the above-mentioned possibility that an omitted variable is driving the relationship between paternity establishment and father involvement. These reduced form models regress three father involvement outcomes on three (exogenous) measures of the strength of the paternity establishment system in the city or state, controlling for all previously discussed variables.

The first measure is the standardized residual of the city-level aggregate in-hospital paternity establishment rate from the 20 Fragile Families cities. For purposes of comparison, we also use the standardized residual of the overall paternity establishment rate in the 20 cities (see Method section for details on construction of the residual measures). The third measure is the number of years since a state passed legislation making voluntary paternity establishment conclusive for the 15 Fragile Families states.

In logit regression equations, not shown, we found evidence that these variables are associated with parents' decisions about paternity establishment, even after controlling for all the above-mentioned parent characteristics. In the nonresident sample equation, the coefficient of the city-level measure, derived from the Fragile Families data, was statistically significant and three times the size of the corresponding

TABLE 3. THE EFFECT OF PATERNITY ESTABLISHMENT IN OR OUT OF THE HOSPITAL (AS COMPARED TO NONE) ON FATHER INVOLVEMENT

	Any Support Received		Any Contact in Past 30 Days		Any Overnight Visits Since Child's Birth ^a	
	Probit Marginal Effect	z	Probit Marginal Effect	z	Probit Marginal Effect	z
In-hospital establishment	0.204***	(7.09)	0.150***	(4.00)	0.162***	(4.57)
Out-of-hospital establishment	0.113**	(2.71)	0.067	(1.63)	0.095	(1.82)
No paternity—comparison group						
N	1,559		1,565		1,383	

Note: The coefficients signify the change in the dependent variable associated with a one-unit change in the independent variable.

^aThis question was not asked in the first version of the questionnaire administered in Oakland and Austin.

p* < .05. *p* < .01. ****p* < .001.

TABLE 4. EFFECT OF THE PATERNITY ESTABLISHMENT REGIME ON THREE MEASURES OF FATHER INVOLVEMENT FOR UNMARRIED MOTHERS WITH NONRESIDENT FATHERS (REDUCED FORM MODELS)

	Any Child Support Received		Any Contact in Past 30 Days		Any Overnight Visits Since Birth	
	Probit Marginal Effect	<i>z</i>	Probit Marginal Effect	<i>z</i>	Probit Marginal Effect	<i>z</i>
Fragile Families city-level residual of in-hospital rate	0.028**	(2.67)	0.032	(1.56)	0.037*	(2.16)
Fragile Families city-level residual of overall rate	0.023	(1.50)	0.027	(1.34)	0.045*	(2.45)
No. of years since state accepted voluntary paternity establishment	0.036***	(3.41)	−0.011	(−0.59)	0.014	(0.85)
<i>N</i>	1,575		1,581		1,396	

Note: All measures have been standardized; thus, a one-unit change represents a change of one standard deviation from the mean. The coefficients signify the change in the dependent variable associated with a one-unit change in the independent variable.

p* < .05. *p* < .01. ****p* < .001.

coefficient in the unmarried-sample equation. Although the coefficients of the state-level measure are the same in the two equations, only the coefficient in the unmarried-sample equation is statistically significant.

Table 4 summarizes the findings of our reduced form equations for the sample of mothers with nonresident fathers. The two city-level measures of the strength of the paternity establishment regime are positively related to all three measures of father involvement (although not all the coefficients are statistically significant). Specifically, nonresident fathers living in a city that is one standard deviation above the mean in the residual of the aggregate in-hospital paternity establishment rate are approximately 3 percentage points more likely to have paid any support, had any contact, and had an overnight visit with their children. The state-level legislative measure of enforcement is positive and significant only for the child support receipt outcome, indicating that mothers who live in a state that introduced voluntary paternity legislation earlier are more likely to be receiving any support (either formal or informal) from the father.

We also examined whether selection into non-residency might be biasing our results. Because cohabiting fathers are presumed to be contributing resources to the child’s household, in most states, they are not required to pay child support. Therefore, the threat of involvement in the formal system in strong child support enforcement states may encourage fathers to cohabit with the mothers of their children. If unmarried mothers

living in cities with stronger paternity establishment practices and policies are more likely to cohabit with the father of their child, and if the fathers who shift from nonresidency to residency are the most committed, this would lead to a higher proportion of less interested fathers in strong enforcement cities—leading to a negative bias in the effects of enforcement on father involvement. We tested for this possible selection effect by regressing the probability that parents were cohabiting on the above measures of enforcement, controlling for all previously discussed covariates (not shown). Two of the measures of enforcement had negative coefficients and the third was positive, but none even approached statistical significance. We suspect that the selection results are insignificant because of the rich set of variables measuring father’s commitment that we included in our models.

CONCLUSION

This study overcomes problems in previous research by using an unusually rich national sample of nonmarital births from the Fragile Families and Child Wellbeing Study, to describe paternity establishment rates 1 year after the birth of the child and to assess the relative magnitudes of in-hospital and out-of-hospital rates. Our data include a wide variety of controls for mothers’, fathers’, and couple characteristics. We estimate the effects of in-hospital establishment on total paternity establishment rates, payment of child support, and father-child

visitation, a nonpecuniary benefit of paternity establishment. To isolate the effects of cohabitation from the effects of paternity establishment, we estimate separate models for all unmarried parents and nonresident parents, with controls for selection into nonresidency.

We find that paternity establishment rates for nonmarital children born around the turn of the century are remarkably high—70%. Six of seven paternities established are attributable to voluntary in-hospital programs. We find that paternity is more likely to be established in the hospital if parents have more human capital (education, health, work, no incarceration history, and no welfare reliance) and if fathers are more supportive of mothers and more committed to the birth (contributed during pregnancy, closer baseline relationship, and no multiple partner fertility).

Finally, paternity establishment has pecuniary and nonpecuniary benefits. We find a strong positive relationship between individual parents' paternity establishment decisions and several measures of father involvement, with in-hospital paternity establishment being more predictive of involvement than out-of-hospital paternity establishment. Though estimates of these benefits are subject to omitted variables bias, in reduced form models, paternity establishment leads to increases in child support payments and increases in the likelihood that the father has had any contact with and has had an overnight visit with the child.

These findings indicate that the mandates to increase paternity establishment rates in PRWORA were not only effective in increasing the proportion of children who receive support from their nonresident fathers but they also were effective in increasing fathers' contact and involvement with their children. Although research has been mixed on the benefits to children of having increased contact and involvement with their nonresident fathers, most of these studies were based on samples dominated by previously married parents with older children (Amato & Gilbreth, 1999). We believe that increasing fathers' involvement very early in the lives of their nonmarital children may prove to be beneficial for their children's long-term well-being, and we plan to examine these relationships in future work.

In future research, we would like to analyze data on the fathers' household to determine whether the composition of his household is

associated with the probability of paternity establishment and father involvement. For example, we would expect that fathers who live with other family members, especially their own mothers, are more likely to have overnight visits with their children because they can share caregiving responsibilities. Mothers are also more likely to entrust children to the care of fathers if other members of his family are available to help care for the child. Living with family members, especially their own mothers, is also likely to be associated with whether fathers want to establish paternity for their nonmarital children.

We also would like to collect and analyze data on whether the mother has entered into a new romantic or visiting relationship, even though she may not be cohabiting with a new partner. Although a new partner may not affect whether paternity was established for the focal child at birth, it could be associated with the likelihood that biological fathers sustain contact with their children.

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APPENDIX. CONTINUED

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
19 Mom has other children with dad	03	02	10*	10*	-02	01	-05*	16*	-02	01	-04	03	-08*	04	08*	04	02	01	—													
20 Mom has children with other dads	-06*	-08*	-02	-06*	0	05*	-04	26*	-05*	02	01	04	-02	0	02	04	0	02	-03	—												
21 Mom wants dad involved	21*	28*	27*	26*	01	09*	01	-03	04	13*	-01	02	-49*	39*	39*	45*	08*	03	03	-02	—											
22 Years parents knew each other	04	03	06*	-01	04	03	0	02	03	04	-04	-04	-10*	10*	08*	06*	03	01	23*	02	04	—										
23 Dad's supportiveness index	20*	25*	24*	23*	01	02	-03	01	10*	03	01	06*	-39*	41*	42*	32*	19*	03	0	-04	35*	05*	—									
24 Dad has drug or alcohol problem	-04	-19*	-16*	-14*	-05*	01	04	0	01	-05*	-02	-11*	20*	-18*	-16*	-19*	-05*	-02	02	02	-21*	01	-21*	—								
25 Dad's race-ethnicity	-06*	-04	-05*	-01	04	-32*	-10*	-05*	-09*	-20*	01	04	01	-03	-04	-09*	02	-01	02	-03	-05	-08*	01	-01	—							
26 Dad's age	-06*	-07*	-03	-18*	03	-08*	-01	05*	-01	0	65*	-01	03	-01	0	-07*	01	-05*	06*	28*	-06*	16*	-04	01	01	—						
27 Dad's education	-08*	-09*	-11*	-10*	-03	-03	08*	-06*	0	-14*	12*	38*	20*	-16*	-16*	-16*	-05	-03	-08*	01	-18*	-03	-01	-06*	-03	20*	—					
28 Dad has children with other mothers	-10*	-13*	-14*	-19*	0	02	02	06*	-01	0	20*	0	06*	-06*	-06*	-05*	-07*	-01	-01	17*	0	03	-06*	06*	01	28*	03	—				
29 Dad worked at baseline	19*	22*	21*	17*	-02	-01	09*	-06*	01	05*	02	02	-24*	28*	23*	27*	0	04	-05*	02	24*	03	19*	-15*	-03	07*	03	-05*	—			
30 Dad is disabled	-03	-04*	-02	-02	-05*	03	-01	04	02	0	06*	0	03	-06*	-02	-06	-01	04	02	05*	-06*	05*	-08*	10*	-03	08*	-03	06*	-11*	—		
31 Dad has been in jail	-07*	-16*	-15*	-12*	0	11*	-04	11*	-01	02	03	-03	03	-07*	-03	01	03	0	06*	04	02	-01	-09*	16*	-04	-08*	-15*	18*	-22*	02	—	
32 Maximum TANF	01	01	05*	02	03	-14*	-14*	-02	-06*	04	-03	07*	-08*	10*	08*	08*	04	-03	01	-01	07*	04	04	-08*	04	01	05	-02	-03	-06*	-03	—
33 City Stamp benefit unemployment rate	09*	04	05	04	38*	08*	-18*	01	03	03	02	03	-07*	09*	11*	04	02	-04	06*	04	03	05*	01	-06*	-02	06*	0	03	-01	-06*	-01	28*

Note: Figures are correlation coefficients, and decimals are omitted.

* $p < .05$.

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